

U.S. Serial No. 10/620,059
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AMENDMENTS TO THE SPECIFICATION

At page 6, please replace current paragraph [0016] with new paragraph [0016]:

[0016] The current invention extends the useful lubricant life in an EGR equipped diesel engine by using a combination of a heat exchanger (cooler) and a chemical filter in the EGR stream to remove the acidic components before they are introduced into the intake manifold. The EGR cooler is adjusted so that the humidity of the EGR stream is higher to promote the absorption of the gaseous acids, the exhaust gases being cooled in the EGR cooler to temperatures such that the relative humidity of the exhaust gas is greater than about 20%, preferably greater than about 50%. The absorbents used include metal carbonates (e.g., calcium or magnesium carbonates), metal oxides (e.g., zinc oxide and Alumina), silica, metal hydroxides (e.g., calcium or sodium hydroxides), activated carbon, synthetic polymer resins (e.g., ion-exchange resins), and other natural absorbents such as limestone and various clays, as well as their mixtures. A single or multiple layers of the absorbents can be used in the filter.

At page 9, please replace current paragraph [0024] with new paragraph [0024]:

[0024] The chemical filter may be placed in any location, preferably where the EGR stream temperatures may be controlled to be near the dew-point. The chemical filter efficiency increases with the maximization of the exhaust gas/water neutralization reaction. Thus locations of high humidity are preferred. Consequently, it is desirable that the exhaust gases be cooled in the EGR cooler to temperatures such that the relative humidity of the exhaust gas is greater than about 20%, preferably greater than about 50%. Indeed, it is theorized that the optimal placement of the filters will be in a location where the EGR stream temperature is only slightly above its dew-point. Non-limiting examples of filter locations are illustrated in Figure 2. The first location is after

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the EGR cooler. The 2nd location is before the intake manifold after the EGR stream is merged with the intake air. While either location may be sufficient, both locations are suggested as the water content will vary not only due to the combustion process, but also the entrained humidity in the intake air. Similarly, the temperature will not only be affected by the EGR cooler, but also by the temperature of the intake air. Thus, filters should be considered for both locations.